

AMENDMENTS TO THE CLAIMS

Please amend Claims 1, 3, 4, 7, 9, 12, and 14 as indicated below.

A complete listing of all claims is presented below with insertions underlined (e.g., insertion), and deletions struckthrough or in double brackets (e.g., ~~deletion~~ or [[deletion]]):

1. (Currently Amended) A method of transferring a non-time-critical, error-intolerant data segment stored on a disk drive, which is responsive to a set of data transfer commands generated by a host processor and which is operating in a mode optimized for transferring time-critical, error-tolerant streaming data segments stored or to be stored on the disk drive, the method comprising:

 sending a sequence of data transfer commands generated by the host processor to the disk drive to transfer a respective sequence of time-critical, non-redundantly-recorded, error-tolerant streaming data segments at a required data transfer rate;

 selectively interposing a first data transfer command into the sequence of data transfer commands, the first data transfer command initiating a first transfer of the non-time-critical, error-intolerant data segment from a first storage location;

 transmitting a data transfer error signal generated by the disk drive to the host processor, the data transfer error signal having a state that indicates whether any data transfer errors have occurred with respect to the first transfer of the non-time-critical, error-intolerant data segment; and

 selectively interposing a second data transfer command into the sequence of data transfer commands, the second data transfer command initiating a second transfer of the non-time-critical, error-intolerant data segment from a second storage location, thereby utilizing storage redundancy to achieve an accuracy required for the non-time-critical, error-intolerant data segment while maintaining the required data transfer rate of the sequence of time-critical, non-redundantly-recorded, error-tolerant streaming data segments.

2. (Original) The method of Claim 1, wherein the second storage location has a predetermined relation to the first storage location.

3. (Currently Amended) The method of Claim 1, wherein the required data transfer rate is less than a maximum data transfer rate for the disk drive, thereby providing time for transferring the non-time-critical, error-intolerant data segment while maintaining the required

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data transfer rate for transferring the sequence of time-critical, non-redundantly-recorded, error-tolerant streaming data segments.

4. (Currently Amended) The method of Claim 1, wherein the time-critical, non-redundantly-recorded, error-tolerant streaming data segments correspond to audio/visual data.

5. (Original) The method of Claim 1, wherein the set of data transfer commands requires no disk-drive-resident error recovery in the event of a data transfer error.

6. (Original) The method of Claim 1, wherein the disk drive is compatible with one or more standards from the group: ATA, SCSI, IEEE 1394.

7. (Currently Amended) A method of storing a non-time-critical, error-intolerant data segment on a disk drive, which is responsive to a set of data transfer commands generated by a host processor and which non-redundantly stores [[both]] time-critical, error-tolerant data segments and which stores non-time-critical, error-intolerant data segments, the method comprising:

 sending a first data transfer command generated by the host processor to the disk drive to write the non-time-critical, error-intolerant data segment on the disk drive;

 writing the non-time-critical, error-intolerant data segment at a first storage location; and

 writing the non-time-critical, error-intolerant data segment at a second storage location different from the first storage location.

8. (Original) The method of Claim 7, wherein the second storage location is at a predetermined position relative to the first storage location.

9. (Currently Amended) The method of Claim 7, wherein the method further comprises:

 sending a sequence of data transfer commands generated by the host processor to the disk drive to transfer a respective sequence of time-critical, non-redundantly-recorded, error-tolerant streaming data segments at a required data transfer rate;

 transmitting a first data transfer error signal generated by the disk drive to the host processor, the data transfer error signal having a state that indicates whether any data transfer errors have occurred with respect to the writing of the non-time-critical, error-intolerant data segment to the first storage location;

transmitting a second data transfer error signal generated by the disk drive to the host processor, the data transfer error signal having a state that indicates whether any data transfer errors have occurred with respect to the writing of the non-time-critical, error-intolerant data segment to the second storage location;

selectively interposing a second data transfer command into the sequence of data transfer commands to write the non-time-critical, error-intolerant data segment on the disk drive if a data transfer error has occurred with respect to the writing of the non-time-critical, error-intolerant data segment to the first storage location or the second storage location; and

writing the non-time-critical, error-intolerant data segment to the disk drive at a third storage location.

10. (Original) The method of Claim 9, wherein the third storage location is the first storage location if the data transfer error has occurred with respect to the writing to the first storage location, and the third storage location is the second storage location if the data transfer error has occurred with respect to the writing to the second storage location.

11. (Original) The method of Claim 9, wherein the third storage location is different from both the first storage location and the second storage location.

12. (Currently Amended) A method of transferring a non-time-critical, error-intolerant data segment stored on a disk drive, which is responsive to a set of data transfer commands generated by a host processor and which is operating in a mode optimized for transferring time-critical, error-tolerant streaming data segments stored or to be stored on the disk drive, the method comprising:

sending a sequence of data transfer commands generated by the host processor to the disk drive to transfer a respective sequence of time-critical, non-redundantly-recorded, error-tolerant streaming data segments within a data transfer bandwidth less than a maximum bandwidth for the disk drive;

selectively interposing a first data transfer command into the sequence of data transfer commands, the first data transfer command initiating a first transfer of the non-time-critical, error-intolerant data segment from a first storage location, the first transfer of the non-time-critical, error-intolerant data segment occurring within a remaining

bandwidth that is a difference between the maximum bandwidth and the data transfer bandwidth;

transmitting a data transfer error signal generated by the disk drive to the host processor, the data transfer error signal having a state that indicates whether any data transfer errors have occurred with respect to the first transfer of the non-time-critical, error-intolerant data segment; and

selectively interposing a second data transfer command into the sequence of data transfer commands, the second data transfer command initiating a second transfer of the non-time-critical, error-intolerant data segment from a second storage location, thereby utilizing storage redundancy to achieve an accuracy required for the non-time-critical, error-intolerant data segment while maintaining the data transfer bandwidth for the sequence of time-critical, non-redundantly-recorded, error-tolerant streaming data segments.

13. (Original) The method of Claim 12, wherein the second storage location has a predetermined relation to the first storage location.

14. (Currently Amended) A video recording system to record and playback non-time-critical, error-intolerant data segments and time-critical, error-tolerant streaming data segments using a disk drive responsive to a set of data transfer commands and optimized for transferring time-critical, error-tolerant streaming data segments at a required data transfer rate, the video recording system comprising:

a user interface that receives user input;

a video input interface that receives an external video data stream for a selected video program segment and that generates time-critical, error-tolerant streaming data segments;

a video output interface that is connectable to a display device; and

a data management system that comprises:

at least one data buffer that receives, non-redundantly stores, and transmits time-critical, error-tolerant streaming data segments; and

a host processor that generates a sequence of data transfer commands sent to the disk drive to transfer a respective sequence of time-critical, non-redundantly-recorded, error-tolerant streaming data segments at the required data transfer rate; that selectively

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interposes a first data transfer command into the sequence of data transfer commands, the first data transfer command initiating a first transfer of a non-time-critical, error-intolerant data segment from a first storage location; that receives a data transfer error signal generated by the disk drive, the data transfer error signal having a state that indicates whether any data transfer errors have occurred in the first transfer of the non-time-critical, error-intolerant data segment; and that selectively interposes a second data transfer command into the sequence of data transfer commands, the second data transfer command initiating a second transfer of the non-time-critical, error-intolerant data segment from a second storage location, thereby utilizing storage redundancy to achieve an accuracy required for the non-time-critical, error-intolerant data segment while maintaining the required data transfer rate of the sequence of time-critical, non-redundantly-recorded, error-tolerant streaming data segments.

15. (Original) The video recording system of Claim 14, wherein the data management system further comprises at least one data buffer that receives, stores, and transmits non-time-critical, error-intolerant data segments.

16. (Original) The video recording system of Claim 14, wherein the data management system further comprises a command buffer.